PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/659,135 Confirmation No.: 4800
Applicant(s): Quantz et al.
Filed: September 10, 2003
Art Unit: 1761
Examiner: T. F. Simone
Title: NUT TRANSPORT ELEMENT FOR USE IN HIGH PRODUCTION NUTCRACKING APPARATUS

Docket No.: 030676/267282
Customer No.: 00826

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

I, James B. Quantz, a resident of Lexington, South Carolina, declare that

1. I am one of the named joint inventors of the above referenced patent application, and I am familiar with the subject matter described and claimed in the application.

2. The following statements are presented for the purpose of explaining some of the benefits and advantages of fabricating the nut transport elements of the feed chain of the described nutcracking apparatus from a high impact plastic material, as compared to the earlier nut transport elements which were fabricated from aluminum alloy.

3. When the earlier feed chain composed of aluminum nut transport elements is adjusted properly, and the feed chain is in proper timing with the rotation of the cracking turret, everything works fine. However, as the machine ages, the sprockets **58, 59, 62**, the drive chain **82**, and the feed chain **57** tend to wear. As a result, the feed chain and drive chain

can jump a tooth on the drive sprocket **58** or on the sprocket **59**. When this happens with the earlier feed chain, it has disastrous results. The anvils **32** of the cracking units **24** will then intersect with the path of the feed chain **57** (note the lower portion of Fig. 2 of the application) and can engage either or both of the forward wing or the rearward wing of the nut transport elements **65** (the "wings" being defined by the slot **76**). The resulting impact will often break off one or both wings of the transport elements, which causes the machine to double feed nuts. If the out-of-time condition is not detected immediately, every transport element on the feed chain can be destroyed. This can cost thousands of dollars in broken parts, destroyed products (nuts) and maintenance time. The anvils **32** of the cracking units can also be damaged.

4. The new plastic nut transport elements have wings which have been found to flex downward during impact with an anvil and return to their original position after impact. With only rare exceptions, the anvils are not damaged, the chain is not destroyed, and the only maintenance required is to re-time the feed chain and remove the slack out of the chain drive system.

5. Another advantage of the use of plastic nut transport elements in the feed system is the difference in weight. The plastic feed chains weigh about one half that of the aluminum chains. The resulting advantages are as follows:

(a) The lightweight feed chains are much easier to change from one size chain to another. It takes two men to change the old style chain whereas one man can change a chain having the new plastic nut

transport elements.

(b) The lightweight chains impart less wear on the components of the machine. The drive chains last longer, the sprockets last longer, and the feed system in general lasts longer.

6. The fact that the nut transport elements are fabricated from plastic permits the elements to be color coded, with the color being present throughout the body of the element, so that it never wears off from surface friction.

7. In my opinion, the above benefits and advantages resulting from the substitution of plastic nut transport elements for the earlier aluminum elements would not have been readily apparent to one skilled in the nutcracking machinery art, and would have been unexpected.

8. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

James B. Quantz
Date: 9/1/04